Speaker

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Title

Non-local Correlation Functions in the Spanning Tree Model near the Boundary

Abstract

Consider a square lattice in the half-plane with the absorbing or reflecting boundary conditions. Fix two segments I_k and J_k of length k near the boundary and consider so called k-leg watermelon, that is, a configuration consisted of k non-intersecting paths linked I_k to J_k. What is the ratio of the number of watermelon configurations to the total number of spanning trees? It turns out that if the distance r between I_k to J_k is large, then the ratio behaves as $r^{-k(k+1)}$ for absorbing boundary conditions and $r^{-k(k-1)}\ln(r)$ for reflecting boundary conditions respectively. Moreover, it is possible to obtain the leading coefficients.

This is ongoing work joint with Alexander Povolotsky.